PA CHRISTMAS TREE SCOUTING REPORT

- Thursday, May 3, 2018

Weekly newsletter compiled by Sarah Pickel, PA Department of Agriculture. This week's scouting data contributors: Jim Fogarty (Halabura Tree Farm) and Cathy Thomas (PDA).

GROWING DEGREE DAY TOTALS FROM 5/2/18:

LOCATION	GDD TOTAL
Elizabethtown, Lancaster Co.	123.5
Indiana, Indiana Co.	88
Montoursville, Lycoming Co.	90.5
New Cumberland, York Co.	150.5
New Ringgold, Schuylkill Co.	136

* Calculation via <u>www.accuweather.com</u> began March 1.

DOUGLAS-FIR BUD BREAK



On fields monitored in Cumberland and **York Counties** yesterday, some Douglas-fir trees were seen with opening buds. In Schuylkill County, buds of smaller Douglas-fir were lightening, so the start is soon to follow. Bud break will begin in varying degrees on certain ages of trees, with young trees generally breaking first, or in certain areas with more sun exposure. The event of bud

break is a signal that fungicide applications for Needle casts of Douglas fir should soon begin, and also that Douglas-fir needle midge will be flying soon.

NEEDLE CASTS OF DOUGLAS-FIR

In any location where Douglas-fir is grown, the fungal needle cast diseases infecting the newly developing needles of Douglas-fir are something growers should be concerned with. The two different diseases are Rhabdocline needle cast and Swiss Needle cast. While the diseases behave similarly, the symptoms for each are different. Swiss needle cast, which seems to be more prevalent in PA causes a browning

of needle tips (last season's and possibly previous). On the underside of these infected needles (and also seemingly healthy needles), with the aid of a hand lens, tiny black fruiting bodies can be seen coming through the rows of stomates. In humid or wet conditions, spores will be released from these fruiting bodies and will be able to infect the newly emerging needles from the opening buds.





While the spores of Rhabdocline needle cast act in the same way, the disease has different symptoms. For instance, Rhabdocline presents as rust-orange lesions or splotches on last season's needles. On the underside of the needles, the lesions will

split and release spores in the presence of moisture.

In the case of both diseases, after the symptomatic needles finish releasing spores throughout the late spring and early summer, these needles will be cast from the tree. Trees with repeated years of infection can appear very thin. To prevent this needle loss, the idea is to apply a preventative layer of fungicide to the new needles before the spores land on those needles. Because the buds of Douglas-fir will be breaking at varying stages throughout the next several weeks, multiple fungicide applications should be applied on a schedule. The standard recommendation for needle cast control is:

- 1st application at the early signs of bud break
- 2nd application 1 week after 1st
- 3rd application 2 weeks after the 2nd
- 4th application 3 weeks after the 3rd

Newer recommendations made by grower and retired extension agent, Paul Shealer suggest that shorter intervals of 7-10 days between each spray with a 5th spray added to the series is what it may take to get good control.

DOUGLAS-FIR NEEDLE MIDGE

Damage from this single-host pest will result in swollen, bent and discolored needles throughout the growing season, which will eventually be cast from the twigs at the end of



DFNM [Sandy Gardosik, PDA]



the year. Build-up of needle midge can lead to some very thin trees, with the heaviest damage often concentrated at the upper portion of the tree. Timing plays a critical role in getting good control of this pest. For the tiny Douglas-fir needle midge adults, it only takes a small opening in the new Douglas-fir buds to be able to insert their slender ovipositor and lay eggs on the new needles. The adults typically emerge from their overwintering habitat underneath the trees within a range of 200-400 GDD. As of this

week, midge were not yet found in emergence traps in Schuylkill County. The midge will mate soon after emergence and are ready to lay eggs within a few days. To prevent damage from occurring, growers can target controls at the first siting of midges in the box emergence traps, or if not trapping, at the earliest sign of bud break. Timing may line up with that of the first fungicide application, but the timing could come before then. If growers are considering mixing pesticide products, it is important to be aware that sometimes pesticide combinations could possibly lead to some damage to new growth.

SPRUCE SPIDER MITES

Last week in Dauphin County and this week in York County, active nymphs and adults of Spruce spider mites were found

moving around on foliage of Fraser firs. Hatch of the red overwintering eggs of spider mites (found on the undersides of twigs) typically starts within a range of 50-121 GDD. These mites feed on nearly any conifer host, but true firs, spruce species and arborvitae seem to be preferred. If scouting for these mites, look for trees with yellowed or tan damage concentrated near the twigs of interior branches. Tapping these branches over a white surface can dislodge active mites, which will show up as red/brown dots which will begin to move across the surface of the plate/clipboard. A hand lens is useful in with this scouting.

Heavy infestations may result in fine gray webbing on damaged branches, and there may also be interior needle

loss. If mites are found on the majority of branches scouted, then a control application may be necessary. With spider mites an earlier application is often better because as the season's temperatures warm up, their life cycle speeds up



and populations can increase exponentially. After making a miticide application, it is recommended that growers monitor treated areas a week to 14 days after the application to see how well the population was controlled. If mites are still active, a second application may be necessary.

WHITE PINE WEEVILS

Over this week and last, growers were making insecticide applications for white pine weevil control. The weevils continued to be found in traps in York and were also found in Schuylkill County traps. The small (< ¼ inch) beetles with mottled brown



Adult WPW [Rayanne Lehman, PDA]

coloring and white spots along the back of the abdomen

could also be found on the leaders of the trees during a sunny day. Look for small sap bubbles where the weevils have been feeding. When ground temperatures are maintained over 50°F, it can be expected that weevils will be active, or after the GDD have passed a range of 7-58. Hosts of include Pines, Spruces and Douglas-fir trees. In fields where leader damage has been previously found, or where weevils have been found in, a single application of insecticide (made to the upper 1/3 of the tree when weevils are found) can be sufficient to get control. Growers may want to continue to monitor traps to see if a second application would be necessary 7-10 days after the first.

BALSAM TWIG APHIDS

In York County this week, there was an increased percentage of hatched Balsam twig aphids. These aphids



were also found in Dauphin County locations last week. The easiest way to monitor this hatch is by tapping symptomatic branches over a white paper plate or other surface. The aphids only damage true fir species, causing twisting or curling of the season's new needles. Before the fir buds open, the aphid feeding does not cause much damage.

However once the buds open, aphids will move into the buds to feed on the new needles. A single application of horticultural oil or insecticide made prior to bud break should be sufficient for control. One other timing factor is the opening of cone buds. Aphids can move into these cone buds to feed and find protection before the needle buds open. In York County this week, cone buds were beginning to increase in size.